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**CLAIMS:**

What is claimed is:

1. A method, in a client, for managing connections to a  
5 server in a distributed environment, comprising:  
    establishing a connection to a server;  
    responsive to conclusion of a communication process  
    using the connection, starting a timer;  
    maintaining a normal reference to a connection  
10 object for the connection;  
    responsive to conclusion of a predetermined time  
    period measured by the timer, maintaining a weak  
    reference to the connection object; and  
    periodically destroying connection objects  
15 maintained by weak references.
2. The method of claim 1, further comprising:  
    determining whether a normal reference to the  
connection object exists; and  
20 reusing the connection if the normal reference  
exists.
3. The method of claim 2, further comprising restarting  
the timer.  
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4. The method of claim 1, further comprising:  
    determining whether a weak reference to the  
connection object exists;  
    determining whether the connection object has been  
30 destroyed if the weak reference exists; and  
    reusing the connection if the connection object has  
not been destroyed.

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5. The method of claim 4, further comprising restarting the timer.

6. The method of claim 4, further comprising:

5 establishing a new connection if the connection object has been destroyed.

7. The method of claim 1, further comprising:

10 sending notification to the server that the connection object is unreferenced when a weak reference to the connection object is maintained.

8. The method of claim 1, wherein the step of periodically destroying connection objects maintained by  
15 weak references comprises destroying the connection object in response to garbage collection by the server.

9. The method of claim 1, wherein the client is a client Java Virtual Machine.

20 10. The method of claim 9, wherein the server is a server Java Virtual Machine.

25 11. The method of claim 10, wherein the client Java Virtual Machine and the server Java virtual Machine reside on the same host machine.

30 12. The method of claim 10, wherein the server Java virtual Machine resides on a host machine that is remote from the machine on which the client Java Virtual Machine resides.

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13. A method, in a client, for reusing a connection to a server, comprising:

identifying a weak reference to a connection object for a connection to a server;

5 determining whether the connection object has been destroyed; and

reusing the connection if the connection object has not been destroyed.

10 14. The method of claim 13, further comprising:

responsive to garbage collection by the server, destroying the connection object.

15 15. The method of claim 13, further comprising:

establishing a new connection if the connection object has been destroyed.

16. The method of claim 13, wherein the connection object is a Java object.

20 17. The method of claim 16, wherein the Java object is a remote method invocation object.

25 18. A method, in a client, for caching connections to a server, comprising:

adding a reference to a connection object for a connection to a weak hash map and a hash map;

responsive to conclusion of a communication process using the connection, starting a timer; and

30 responsive to conclusion of a predetermined time period measured by the timer, removing the reference to the connection object from the hash map.

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19. The method of claim 18, further comprising:

determining whether the connection object has been destroyed; and

removing the reference to the connection object from  
5 the weak hash map if the connection object has been destroyed.

20. An apparatus, in a client, for managing connections to a server in a distributed environment, comprising:

10 connection means for establishing a connection to a server;

timer means for starting a timer responsive to conclusion of a communication process using the connection;

15 normal reference means for maintaining a normal reference to a connection object for the connection;

weak reference means for maintaining a weak reference to the connection object responsive to conclusion of a predetermined time period measured by the  
20 timer; and

garbage collection means for periodically destroying connection objects maintained by weak references.

21. The apparatus of claim 20, further comprising:

25 means for determining whether a normal reference to the connection object exists; and

means for reusing the connection if the normal reference exists.

30 22. The apparatus of claim 21, further comprising means for restarting the timer.

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23. The apparatus of claim 20, further comprising:  
means for determining whether a weak reference to  
the connection object exists;  
means for determining whether the connection object  
5 has been destroyed if the weak reference exists; and  
means for reusing the connection if the connection  
object has not been destroyed.

24. The apparatus of claim 23, further comprising means  
10 for restarting the timer.

25. The apparatus of claim 23, further comprising:  
means for establishing a new connection if the  
connection object has been destroyed.  
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26. The apparatus of claim 20, further comprising:  
means for sending notification to the server that  
the connection object is unreferenced when a weak  
reference to the connection object is maintained.  
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27. The apparatus of claim 20, wherein the client is a  
client Java Virtual Machine.

28. The apparatus of claim 27, wherein the server is a  
25 server Java Virtual Machine.

29. The apparatus of claim 28, wherein the client Java  
Virtual Machine and the server Java virtual Machine  
reside on the same host machine.

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30. The apparatus of claim 28, wherein the server Java virtual Machine resides on a host machine that is remote from the machine on which the client Java Virtual Machine resides.

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31. An apparatus, in a client, for reusing a connection to a server, comprising:

identification means for identifying a weak reference to a connection object for a connection to a server;

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determination means for determining whether the connection object has been destroyed; and

connection means for reusing the connection if the connection object has not been destroyed.

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32. The apparatus of claim 31, further comprising:

garbage collection means for destroying the connection object responsive to garbage collection by the server.

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33. The apparatus of claim 31, further comprising:

means for establishing a new connection if the connection object has been destroyed.

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34. The apparatus of claim 31, wherein the connection object is a Java object.

35. The apparatus of claim 34, wherein the Java object is a remote method invocation object.

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36. An apparatus, in a client, for caching connections to a server, comprising:

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reference means for adding a reference to a connection object for a connection to a weak hash map and to a hash map;

timer means for starting a timer responsive to  
5 conclusion of a communication process using the connection; and

removal means for removing the reference to the connection object from the hash map responsive to conclusion of a predetermined time period measured by the  
10 timer.

37. The apparatus of claim 36, further comprising:

means for determining whether the connection object has been destroyed; and

15 means for removing the reference to the connection object from the weak hash map if the connection object has been destroyed.

38. A computer program product, in a computer readable  
20 medium, for managing connections in a distributed environment, comprising:

instructions for establishing a connection;

instructions for starting a timer responsive to conclusion of a communication process using the  
25 connection;

instructions for maintaining a normal reference to a connection object for the connection;

instructions for maintaining a weak reference to the connection object responsive to conclusion of a  
30 predetermined time period measured by the timer; and

instructions for periodically destroying connection objects maintained by weak references.

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39. A computer program product, in a computer readable medium, for reusing a connection to a server, comprising:

- instructions for identifying a weak reference to a connection object for a connection;
- instructions for determining whether the connection object has been destroyed; and
- instructions for reusing the connection if the connection object has not been destroyed.

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40. A computer program product, in a computer readable medium, for caching connections to a server, comprising:

- instructions for adding a reference to a connection object for a connection to a weak hash map and a hash map;
- instructions for starting a timer responsive to conclusion of a communication process using the connection; and
- instructions for removing the reference to the connection object from the hash map responsive to conclusion of a predetermined time period measured by the timer.

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